

APPENDIX D2

Brochure entitled "RT3210 Radio  
Data Terminal" (Four Sides)  
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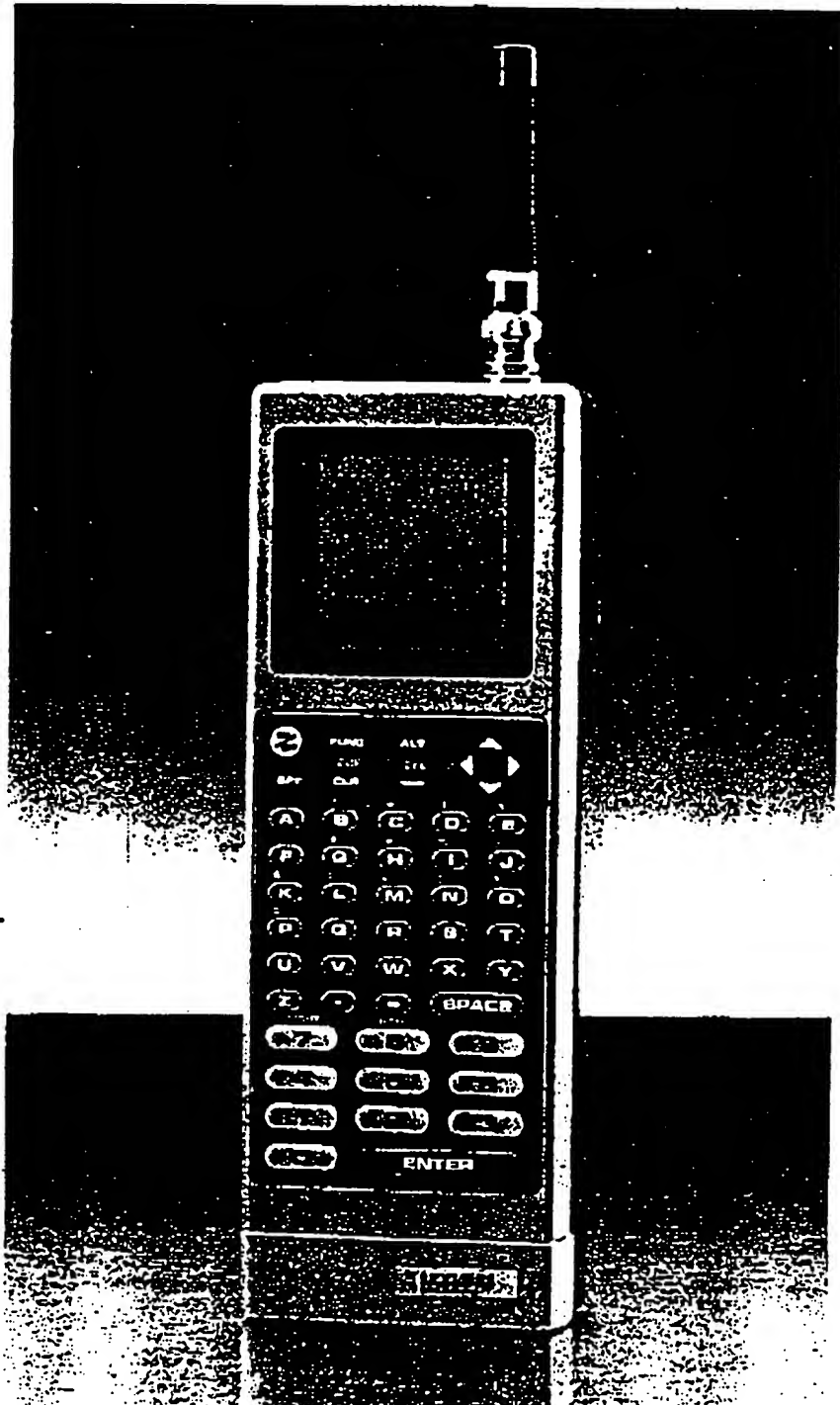
**The Durability of the NORAND® RT3210 Provides the Flexibility to Fit the Way You Do Business**

The new RT3210 Radio Frequency Terminal is an exceptionally designed hand-held that provides the optimum in system flexibility and durability. It's the latest in an established line of hand-held terminals and computers offered by Norand Corporation.

The RT3210's industrialized, die-cast metal alloy housing makes it the perfect fit for most any application requiring extended use... even in the most rugged environments. Tempered to withstand extremes in drop, shock, vibration, and temperature, the RT3210 is designed to meet and exceed stringent Military Specifications 810D.

**FEATURES:**

- Industrialized metal alloy housing for optimum durability
- Ergonomically contoured for operational ease of use and comfort
- Unique interchangeable mobile/forklift mount design for maximized flexibility
- Industry-standard 9-pin scanner connector for both 5V and 12V scanning peripherals
- Printer port 15-pin connector supports popular bar code printers



## The Versatility of the NORAND® RT3210 RF Terminal Offers Unsurpassed Value

The NORAND® RT3210 Hand-Held Terminal features the latest technological and ergonomic innovations. The solid RT3210 ensures dependable operations in the most adverse conditions.

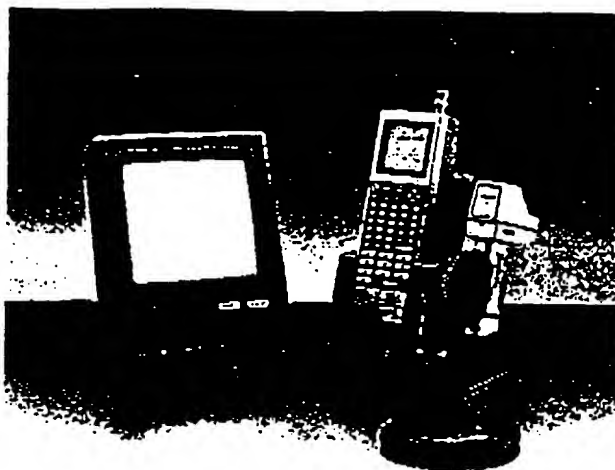
The Radio Frequency Terminal's environmentally sound construction offers the utmost in system durability. The die-cast metal alloy housing is tested to withstand drops to a concrete surface of 4-feet on 6 sides. The NORAND RT3210 redefines reliability for all applications in any environment requiring on-line wireless data communications.

All application software for the RT3210 resides in the host computer and can be written in any programming language. The need for special development systems is eliminated, allowing for faster program implementation.

The RT3210 extends the boundaries of computerization through two-way, radio frequency communications. It goes where



*The contoured styling of the RT3210 makes it the perfect companion for ensuring pricing accuracy, receiving and tracking inventory, setting ad promotions, and performing many other operational control functions.*



*The uniquely designed Vehicle Communications System from Norand provides the modularity freedom to use your RT3210 Terminal in either a forklift mount application or as a hand-held.*

you go, allowing you to access and update information (stored in your host system) from remote areas of your facility.

### • New Ergonomic Design

The contoured styling of the RT3210 conforms to the user's hand. This ergonomic styling makes extended use one of comfort and unconstrained operation.

A Super Twist LCD (liquid crystal display) provides crisp resolution in a user configurable 16 line by 21 character or 10 line by 16 character display. A contrast control adjustment feature enhances readability in varying light situations. The display also incorporates an electroluminescent backlight for use in low light and nighttime operations.

Special display features guide users through each step of operation. The terminal's status can be determined at a glance. Nine indicators at the bottom of the LCD convey the unit's state of operation. In addition, audible alerts inform the user of special

conditions and provide audible response to key strokes.

Keyboard styling and function keys enhance the operational efficiency of the RT3210. The sealed 47-key alphanumeric keyboard is designed for optimum user acceptance. An integrated cursor control provides expanded mobility for rapid movement across the display screen.

The hand-held terminal is powered by a 7.5 volts dc (nominal), nickel-cadmium battery. The battery pack effortlessly slides in and out of the RT3210 for expedient battery interchangeability. A latching mechanism secures the battery in the RF terminal during operation.

### • Modular Approach Maximizes Flexibility

The value of the RT3210 is enhanced with the introduction of the first interchangeable Vehicle Communications System. The RT3210 can be forklift mounted or instantly removed for use as a portable hand-held terminal, independent of the material handling vehicle.

The Vehicle Communications System, consisting of the CA5950 Communications Adapter (powered) or TM3955 Terminal Mount (nonpowered) and the RD3990 Remote Display, gives you the modularity freedom to use the RT3210 hand-held terminal in an extended range of applications/situations. Each component of the Vehicle Communications System can be conveniently mounted on most any material handling equipment.

The CA5950 has the ability to power and charge the RT3210 utilizing the material handling vehicle's battery power supply. The adjustable swivel mounts (tilt and rotation) of the CA5950 and TM3955 securely hold the terminals in place and provide easy operator accessibility.

#### • Peripheral Connectivity for Expanded Versatility

The RT3210 is equipped with a 9-pin D-sub connector for interface to industry standard bar code scanning devices. It also supports both 5 volt and 12 volt helium-neon scanners in addition to laser diodes, CCD's, and light pens.

All major bar code symbologies are supported by the NORAND® RT3210 Hand-Held Terminal.

A printer output communications port serves as the junction for — connecting the hand-held to bar code printers and other automatic identification peripherals. The 15-pin D-sub connector is located at the base of the RT3210 for easy accessibility and connectivity.

#### • Exclusive Automatic Baud-Rate Switching

The new third-generation digital radio of the NORAND RT3210 delivers unmatched coverage for maximized throughput. The patented automatic baud-rate switching on the RF link ensures

the fastest reliable communications of data.

The variable rate capability of the terminal constantly monitors the link and transmits at 9,600 b.p.s. when conditions permit... or switches to 4,800 baud to boost transmission reliability in fringe coverage areas. A data compression feature and exclusive automatic baud-rate switching greatly enhance response time.

The RT3210 also incorporates the Norand exclusive Real-Time-Control™ system protocol. This unique RF protocol speeds response time and is exceptionally effective when numerous terminals are simultaneously in use.

#### • System Architecture

The RT3210 provides the link between your host computer and remote areas of your facility and operates under the control of the

host computer. The multiplexer or controller handles the timing, protocol, and data buffering between the host and the hand-held terminals. The high-performance base radio transceiver transmits the commands to the terminal.

Because the RT3210 requires no special user programming, it quickly and easily integrates into any host computer system. Host system software can be written in the language of the user's choice. A few command code additions to existing software is generally all that is needed to get the Norand system up and running in your operation. Updates, changes, and additions to the software are made solely at the host system.

The simple, yet comprehensive RF system approach from Norand is unparalleled in the industry. This philosophy makes the RT3210 the most versatile hand-held terminal on the market.



*The environmentally sound RT3210 terminal and Vehicle Communications System are designed to withstand harsh industrial conditions.*

# RT3210 Radio Data Terminal

## SPECIFICATIONS

### Product Features:

**Transceiver:** Incorporates a 2 watt (UHF) frequency modulated (FM) radio transceiver controlled by the microprocessor. Type accepted per FCC Rules & Regulations, Parts 2 & 90, Private Land Mobile Radio Service

**Liquid Crystal Display (LCD):** Super Twist LCD with configurable 16 line x 21 character and 10 line x 16 character display feature (1 line of display designated for annunciators) with contrast control adjustment feature

**Backlighting:** LCD is backlit using an electroluminescent panel

**Annunciators:** TX (transmitting), RX (receiving), CL (communications loss), BATT (low battery), SHFT (shift), E (external power), ALT (alternate), FUNC (function), and + (9600 baud) are displayed on bottom line of LCD

**Keyboard:** Sealed elastomer 47-key alphanumeric tactile feel

**Self-Diagnostics:** Performed on power-up with built-in user accessible diagnostics

**Audio Alert:** An audible buzzer is activated under host control

**Static Shock Protection:** Terminal is hardened against electrostatic discharge up to 20,000 volts

**Shielding:** Conforms to FCC Part 15 for Class A computing devices

**Printer Port:** 15-Pin D-Sub connector

**Scanner Interface:** 9-Pin D-Sub connector with selectable 5 volt and 12 volt scanning options

**Hand Strap:** Elastic strap (on back of terminal) secures terminal firmly in hand to facilitate handling

**RAM:** 64K bytes x 8 bits, nonvolatile with lithium battery back-up

**ROM:** 64K bytes x 8 bits

### Device Features:

**Microprocessor:** High-performance CMOS (80C552)

**Nonvolatile RAM:** Provides data protection for the RAM buffer even when the terminal is turned off or the battery pack is removed

**Environmental Standards:** Approved by Factory Mutual Research as nonincendive for Division 2 environments for all classes and groups. Intrinsic safety (Division 1 environments) approval in process.

### Physical Dimensions:

**Size:** 10.25" x 3.35" x 2.25" (LWD)  
(26.04cm x 8.51cm x 5.72cm)

**Antenna Length:** 3.25" (8.26cm)

**Weight:** 42 ounces (1.2kg)

### Environmental Characteristics:

#### Temperature:

**Operating:** -4° to 122°F (-20° to 50°C)

**Storage:** -22° to 140°F (-30° to 60°C)

**Recharging:** 41° to 104°F (5° to 40°C)

**Humidity:** 0 to 90% noncondensing

**Altitude:** To 10,000 feet (3,048 meters) above sea level

### Internal Power Source:

**Battery Cells:** Rapid charge nickel-cadmium batteries

**Voltage:** 7.5 VDC (nominal)

**Operating Time From Batteries:** 10 hours typical, based on customer usage

### RT3210 Battery Pack Characteristics:

**Normal Recharge:** Recharge cycle complete in less than 8 hours

**Fast Charge:** Fast recharge cycle complete in less than 2 hours

**Standby Holding Charge:** Maintains the batteries at full charge by supplying a trickle charge rate

**Low Battery Indicator:** Visual annunciator (BAT) indicating low battery is displayed on bottom line of LCD

### Battery Pack Charging:

**Charging Sources:** AC adapter-type single terminal chargers, multi-terminal chargers, and multi-battery pack chargers available

**Input Power:** 110/220 VAC, 50/60 Hz

**Electrical Safety Approvals:** UL, CSA

### Radio Characteristics:

**Radiated Power:** 2 watts (maximum)

**Frequency Range:** 450 to 470 MHz

**RF Data Rate:** 4800 baud/9600 baud

### Type Certification:

**USA:** FCC (Parts 2 & 90)

**Canada:** DOC

**Australia:** DOTS

**Mexico:** SCyT

### Bar Code Scanning Support:

**CCD Bar Code Scanners**  
**Laser Scanners (HeNe and Laser Diode)**  
**Pen Wands**

### Bar Code Symbolologies Supported:

UPC/EAN, UPC/EAN with add-ons, Code 39, Extended Code 39, Encoded Code 39, Code 93, Code 128, Interleaved 2 of 5, Plessey, Codabar, ABC Codabar, Straight 2 of 5, and Computer Identics 2 of 5

**NORAND®**  
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